PHP92

EVALUATION OF A WIRELESS HANDHELD MEDICATION MANAGEMENT PROGRAM IN THE PREVENTION OF DRUG-DRUG INTERACTIONS

Saverno K, Malone DC

University of Arizona College of Pharmacy, Tucson, AZ, USA

OBJECTIVES: Drug-related adverse events impose a substantial burden on patients and health care systems. Electronic prescribing (e-prescribing) systems have been identified as effective tools to improve quality, safety, and efficiency in health care delivery. The purpose of this study is to evaluate the effectiveness of a wireless medication management program in a commercially available e-prescribing system in the prevention of serious drug-drug interactions (DDIs). **METHODS:** This study employed a retrospective pre-post with a control group design to evaluate the effectiveness of wireless handled medication management program in preventing serious DDIs. A total of 1975 prescribers who received personal digital assistants (PDA) between August 1, 2004 and June 30, 2005 constituted the technology user group. The comparison group included 1063 prescribers who sent a request to obtain, but did not receive, the technology during the same period. Multivariate regression analysis was used to determine if there were differences between the two groups of prescribers in the rate of prescribing clinically important DDIs. **RESULTS:** Prescribers in the two groups were significantly different in their specialty practice areas and number of pharmacy claims and at baseline. However both groups were similar in their average age, profession, and practice type. Prescribers varied in their use of the e-prescribing system to access patient medication history, the average number of patient medication history updates requested per prescriber in the user group was 42.09 (ranging from 0 to 1073). The most widely prescribed DDIs included those involving warfarin with non steroidal anti-inflammatory drugs (NSAIDs) and anticoagulants with thyroid hormones. Compared to the control group, PDA users did not have significantly greater decrease in the number of serious potential DDIs as compared to non users ($p = 0.65$). **CONCLUSIONS:** The availability of near real-time patient medication history did not have a significant impact on reducing the rate of prescribing clinically important DDIs.

PHP93

PRESCRIPTION PATTERNS OF CHINESE HERBAL PRODUCTS SUSPECTED OF CONTAINING ARISTOLOCHIC ACID: ANALYSIS OF REIMBURSEMENT DATA OF A COHORT FROM TAIWAN DURING 1997–2003

Hsieh SC[1], Wang JD[2]

[1]Center for Drug Evaluation, Taipei City, Taiwan, [2]National Taiwan University, College of Public Health, Taipei, Taiwan

OBJECTIVES: Although the nephrotoxic and carcinogenic effects of Aristolochic acid (AA) have already been well documented, there is a distinct lack of evidence on the long-term consumption of Chinese herbal products (CHPs) which either contain Aristolochia herb species, or which have been adulterated by herbs suspected of containing AA (SAA herbs). We set out to identify the risks and to determine the prescription patterns in Taiwan of CHPs containing SAA herbs (SAA CHPs) prior to the promulgation of the regulations banning their use. **METHODS:** A longitudinal analysis was carried out on a randomly sampled cohort of 200,000 patients using 1997–2003 data obtained from the Taiwan National Health Insurance (NHI) reimbursement database. **RESULTS:** During the seven-year study period, a total of 78,644 patients had been prescribed with SAA CHPs on at least one occasion, the majority of whom were females and/or middle-aged. A total of 526,867 prescriptions were issued containing 1,218 licensed SAA CHP items. Over 85% of SAA-exposed patients took less than 60 gms of SAA herbs; however, about 7% were exposed to a cumulative dose in excess of 100 gms of Xi xin, Mu tong or Ma dou ling. Diseases of the respiratory and musculoskeletal system were the most common indications for the SAA CHP prescriptions. The most frequently prescribed SAA CHPs were Shu jing huo xie tang, Chuan qiong cha diao san, and Long dan xie gan tang, respectively containing Fang ji, Xi xin, and Mu tong. **CONCLUSIONS:** About one-third of people in Taiwan have at some time been prescribed with SAA CHPs, and although the cumulated dosages may not be large, future studies are indicated to safeguard CHP usage.

PHP94

WHEN COMPARATIVE EVIDENCE IS UNCERTAIN: USE OF QUANTITATIVE CONSENSUS METHODS TO FILL IN GAPS

Miller RM, Dubois R

Cerner LifeSciences, Beverly Hills, CA, USA

OBJECTIVES: In creating economic models or reimbursement dossiers, gaps in evidence inevitably arise. Typically, these gaps are addressed in a non-systematic and non-quantitative manner, leading to inter-expert variability and disagreement amongst clinicians and decision-makers. The RAND Appropriateness Method is a validated, structured multi-round Delphi consensus process that we have adapted to US and ex-US expert panels with broad stakeholders including varying groups of both clinicians and payers. We have successfully applied this adapted technique across multiple topics including diabetes, cancer, depression, and Alzheimer's disease. **METHODS:** Participants reviewed published evidence, guidelines and community practice data and completed multi-round ratings (9-point scale) with individual and group feedback. Panels rated (and sometimes ranked) in pre- and post-fashion the likelihood and importance of selected clinical and/or patient-reported outcomes, as well as the level of scientific evidence and appropriateness of therapeutic options to address them. Median scores and measures of dispersion/disagreement were calculated for each round of ratings. **RESULTS:** Utilizing this method consistently resulted in a lower median opinion post-rating of importance and/or decision categories that are "based on their own experiences or that of their peers" – i.e. a change to more evidence-based decisions rather than anecdotal. Additionally, while round 1 ratings often had high disagreement rates between payers and clinicians or between different treating clinicians, those rates of disagreement fell after evidence review and discussion. Moreover, using this method, payer experts were able to create narrower parameter estimates for the prevalence of disease complications and its resulting mortality for use in economic modeling. Although pre-ratings of value messages were highly variable, payers' post-evaluation ratings after evidence review had less variability and higher (more compelling) scores. **CONCLUSIONS:** Use of quantitative consensus processes can minimize idiosyncratic variation among experts and create a more reliable connection between evidence and decision making.

HEALTH CARE USE & POLICY STUDIES – Quality of Care

PHP95

MEDICATION ADMINISTRATION PROCESS CONDUCTED BY NURSES IN INTENSIVE AND ACUTE CARE UNITS OF A HOSPITAL: A TIME AND MOTION STUDY

Dasgupta A[1], Sansgiry S[2], Frost C[3], Tipton J[3], Sherer J[2]

[1]University of Texas at Austin, Austin, TX, USA, [2]University of Houston, Houston, TX, USA, [3]St. Luke's Episcopal Hospital, Houston, TX, USA

OBJECTIVES: To determine workflow variables associated with medication administration process conducted by nurses in intensive and acute care units of a hospital. **METHODS:** A time-and-motion study was conducted in intensive and acute care units of a hospital. Each medication administration was operationalised as a combination of five activities namely direct patient care (five tasks), indirect patient care (four tasks), administration (four tasks), miscellaneous (three tasks) and other. Time devoted to each medication administration and each task were evaluated by means of two pre-calibrated stop-watches. Perception of nurses regarding workflow burden during each medication administration was determined on a five point Likert scale as strongly disagree (1)—Strongly agree (5). Furthermore patient features (age, gender, number of co-morbidities, length of stay) and complexity of medication administration (frequency of each task, number of assistants involved, number of drugs administered through different routes) were used to predict medication administration time. Descriptive statistics were reported. Stepwise regression analysis was performed to examine predictors of medication administration time. **RESULTS:** Mean medication administration time in intensive ($N = 101$) and acute ($N = 100$) care units were 5.2 ± 3.7 minutes and 5.3 ± 3.5 minutes respectively. Overall nurses had positive perception regarding the supportive workflow structure of intensive (4.4 ± 0.08) and acute care (4.6 ± 0.5) units. Stepwise regression analysis indicated that significant ($p < 0.05$) predictors of medication administration time in intensive care unit were time devoted to administration ($\beta = 0.57$), direct patient care ($\beta = 0.30$), and miscellaneous ($\beta = 0.14$) activities. Likewise significant ($p < 0.05$) predictors of medication administration time in acute care unit were time devoted to administration activity ($\beta = 0.67$), gender of patient ($\beta = 0.21$) and number of inhaled drugs administered ($\beta = 0.16$). **CONCLUSIONS:** Administration activity played a predominant role during medication administration in both units. Measures taken by hospital pharmacy to optimize such an activity may result in reduction of workflow burden encountered by nurses in the units.

DIABETES/ENDOCRINE DISORDERS – Clinical Outcomes Studies

PDB1

LITERATURE REVIEW OF THE IMPACT OF OBESITY ON CARDIOVASCULAR OUTCOMES IN THE GENERAL POPULATION AND IN PATIENTS WITH TYPE-2 DIABETES

Smith-Palmer J[1], Kalsekar A[2], Boye KS[2], Goodall G[1]

[1]IMS Health, Basel, Switzerland, [2]Eli Lilly and Company, Indianapolis, IN, USA

OBJECTIVES: There is an established causal link between obesity and cardiovascular outcomes. The aim of this review was to determine whether an independent relationship exists between anthropometric measurements of weight (typically body mass index [BMI]) and cardiovascular outcomes (e.g., angina, myocardial infarction, congestive heart failure, stroke, mortality) in the general population and in patients with type-2 diabetes. **METHODS:** A review of the medical literature was conducted between 1988 and May 2008 using the PubMed, EMBASE, Cochrane and Center for Review and Dissemination databases. We included studies that were longer than 12 months, had greater than 500 adult subjects and were written in the English language. **RESULTS:** In studies conducted in general populations there was an overall trend towards increased risk for cardiovascular outcomes with increasing BMI. However, a few studies reported a J-shaped or U-shaped between BMI measurements and cardiovascular events. The nature and strength of this relationship varied according to the measurement used (e.g., BMI, waist circumference, waist-to-hip ratio) and the population studied, with notable differences observed in Asian/Asia-Pacific based studies compared with those conducted in European or North American populations. There was limited data from prospective, long-term, longitudinal studies examining the relationship between degrees of weight and cardiovascular disease in patients with type-2 diabetes. **CONCLUSIONS:** In general, the degree of being overweight or obese